



# AEROSPACE & AUTOMOTIVE

MECHANICAL PARTS: GEARS, BEARINGS, ENGINES, FASTENERS...



ECOLOGICAL CLEANING SOLUTIONS

 SWISS QUALITY



## CLEANING AND SURFACE PREPARATION

Quality, reliability and expertise applied to surface preparation and cleaning of sensitive mechanical parts in aerospace and automotive

### COMPATIBILITY

- Aluminium 2024, 6061, 6082, 7075
- Titanium, TA6V
- Copper alloys
  - Brass
  - Nickel Aluminium Bronze
  - Silicon Bronze
  - Silicon Aluminium Bronze
  - Manganese Bronze
  - Beryllium Copper
- Ceramics
- Polymers\*
  - Nylon, PA, PEEK

### PARTS

- Bearings
  - Ball
  - Cage
  - Ring
- Pistons
  - Compression rings
  - Bearing shells
  - Rod
  - Piston
- Gears
- Shafts
- Fasteners
- Springs

### POLLUTIONS

- Oxides
- Neat oil
- Soluble oil
- Polishing paste
- Welding marks

\* Please contact NGL before implementing a process

## DETERGENTS, SOLVENT, FINISHING AND SPECIFIC APPLICATIONS

PRODUCT	pH	TYPE	FUNCTION	APPLICATION/CONTAMINATION
RUBIFIN 4	N.A.	Solvent	Vacuum or ultrasonic degreasing	Neat oil
ALLSTRIP	N.A.		Ultrasonic cleaning	Greases, lacquers, glues
UNISON 1	10.9	Detergent		Greases, polishing pastes, soluble oils
GALVAPREP SU 2018	10.3			
MESSERCLEAN 2022	0.5			
RODASTEL 30	0.5	Finishing detergent		Hydrophilic finish, brightening effect
SOLVIT N°4	1.8		Deoxidation	

### SUPPORT

- NGL Academy:** training on precision cleaning, passivation, water treatment, and HSE regulation
- Application Centre:** various cleaning systems and wide range of analytical tools for all types of tests
- Worldwide and local implementation**

### ISO CERTIFICATION\*

- ISO 9001 - Quality
- ISO 14001 - Environment
- ISO 45001 - Health and safety at work

\*Applicable to the production site at NGL Cleaning Technology SA

## SOLVENT

for cutting oil removal

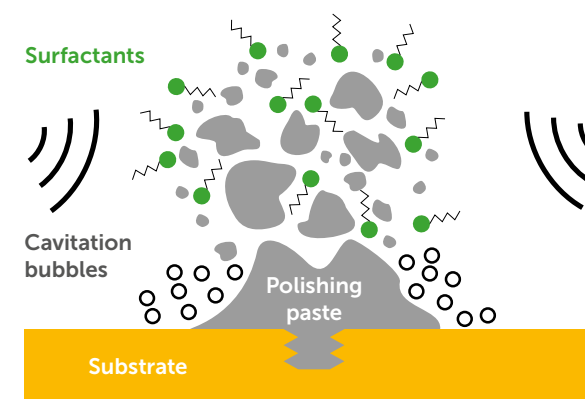
### ■ RUBIFIN N°4

A3 solvent for degreasing in vacuum or ultrasonic processes. Its hydrocarbon-free formulation does not leave any greasy film on the parts in a vacuum process.

### ■ ALLSTRIP

Water-soluble solvent with a high flash point for the removal of glues, lacquers, in ultrasonic processes or in beakers. May replace acetone for degreasing operations.

## ULTRASONIC CLEANING:



Parameters for cleaning:



Clean and bright surface  
Cleaned blind holes

## FINISHING

for rinsing, brightening

### ■ RODASTEL 30

Multipurpose acid finish: deoxidation / brightening of metals (steel, aluminium, brass and other copper alloys) and removal of firescale from laser engraving or welding.

### ■ SOLVIT N°4

Strong acid detergent for heavy duty deoxidizing and surface activation prior to PVD coating or electroplating.

## MILD ALKALIS AND ACID CLEANERS

for heavy pollutions on sensitive alloys

### ■ UNISON 1

Universal detergent for ultrasonic cleaning. Particularly effective on polishing pastes and light oils, also has a brightening effect on metals.

### ■ GALVAPREP SU 2018

Universal powdered detergent, compatible with all substrates for ultrasonic cleaning. Effective on polishing pastes and light oils, rinses off easily, suited for aluminium alloys.

### ■ MESSERCLEAN 2022

Acid detergent, effective on polishing pastes and stearate and synthetic oils.



## EQUIPMENT

With our **UPC 3000**, ensure on a daily basis that your equipment is properly set up:

- Measurement of ultrasonic power in Watts/L
- Measurement of the conductivity
- Temperature measurement
- Detergent concentration measurement
- Measuring the quality of demineralised water (0.001  $\mu\text{S}/\text{cm}$  to 200  $\mu\text{S}/\text{cm}$ )







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- Copper alloys
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  - Silicon Bronze
  - Silicon Aluminium Bronze
  - Manganese Bronze
  - Beryllium Copper
- Ceramics
- Polymers \*
  - Nylon, PA, PEEK

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PARTS

- Bearings
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- Pistons
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  - Rod
  - Piston
- Gears
- Shafts
- Fasteners
- Spring

POLLUTIONS

- Oxides
- Neat oil
- Soluble oil
- Polishing paste
- Welding marks

DETERGENTS, SOLVENT, FINISHING AND SPECIFIC APPLICATIONS

PRODUCT	pH	TYPE	FUNCTION	APPLICATION/CONTAMINATION
DECOSPRAY HT 13 <sup>1</sup>	13.7	Detergent	Spray cleaning	Neat oil
DECOSPRAY HT 8 <sup>1</sup>	8.5			
DECOSPRAY SUPER <sup>1</sup>	8.4			
DECOSPRAY TM <sup>1</sup>	9.6			
BIOPTIC 101	1.8	Finishing detergent	Spray cleaning	Hydrophilic finish, brightening effect
BIOPTIC 201	0.7			Deoxidation
KORROSTOP 5000	12.3	Rinsing additive		Protection against corrosion

<sup>1</sup> Requires an oil separator

SUPPORT

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STRONG TO MILD ALKALIS

for heavy pollutions

DECOSPRAY HT13

Strong alkaline detergent for the removal of neat oil, polishing compounds in spray processes. The machine must be equipped with an oil separator. **Suited for aluminium alloys.**

DECOSPRAY HT8

Mild alkaline detergent for the removal of neat oil, polishing compounds in spray processes. The machine must be equipped with an oil separator. **Suited for aluminium alloys.**

DECOSPRAY SUPER

Mild alkaline detergent for the removal of neat oil, polishing compounds in spray processes. The machine must be equipped with an oil separator.

DECOSPRAY TM

Mild alkaline detergent for the removal of neat oil, polishing compounds in spray processes. The machine must be equipped with an oil separator.

CORROSION PROTECTION

KORROSTOP 5000

Rinsing additive in final rinse steps for an optimal protection against corrosion of sensitive steels.

FINISHING

For neutralising and deoxidation

BIOPTIC 101

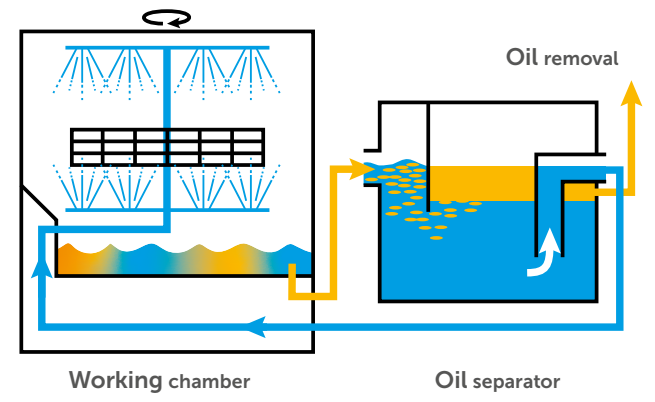
Multipurpose acid finish: deoxidation / brightening of metals (steel, aluminium, brass and other copper alloys) and removal of firescale from laser engraving or welding.

BIOPTIC 201

Strong acid detergent for heavy duty deoxidizing and surface activation prior to PVD coating or electroplating.



PRINCIPLE OF SPRAY CLEANING



EQUIPMENT

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- Measuring the quality of demineralised water (0.001 µS/cm to 200 µS/cm)



## CLEANING AND SURFACE PREPARATION

Quality, reliability and expertise applied to surface preparation prior to PVD/CVD coating, and removal of PVD/CVD coatings

### COMPATIBILITY

- Super alloys:
  - Inconel, Waspalloy, A286
- Hard steels:
  - 52100 chrome steel, cast iron
  - 15-5PH, 17-4PH
- Bearing steels:
  - D50, 440C, 316
- Ceramics
- Polymers\*
  - Nylon, PA, PEEK

\* Please contact NGL before implementing a process

### PARTS

- Bearings:
  - Ball
  - Cage
  - Ring
- Pistons:
  - Compression rings
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- Gears
- Shafts
- Fasteners
- Spring

### POLLUTIONS

- Neat oil
- Soluble oil
- Polishing paste
- Welding marks

## DETERGENTS, SOLVENT, FINISHING AND SPECIFIC APPLICATIONS

PRODUCT	pH	TYPE	FUNCTION	APPLICATION/CONTAMINATION
RUBIFIN N°4	N.A.	Solvent	Vacuum or ultrasonic degreasing	Neat oil
ALLSTRIP	N.A.			Greases, lacquers, glues
RODACLEAN 2018	14	Detergent		Greases, polishing pastes, soluble oils
RODASTEL 30	0.5	Finishing detergent	Ultrasonic cleaning	Hydrophilic finish, brightening effect
SOLVIT N°4	1.8			Deoxidation
DECOMET	1.0			Passivation
GALVEX 18.08	9.5			Hydrophobic finish
KORROSTOP 5000	12.3	Rinsing additive	Ultrasonic cleaning	Protection against corrosion

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## SOLVENT

for cutting oil removal

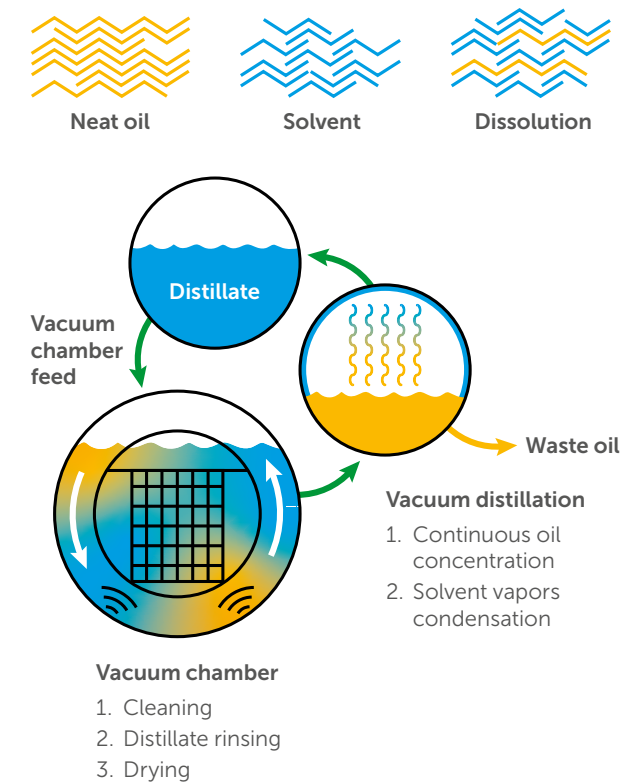
### ▪ RUBIFIN N°4

A3 solvent for degreasing in vacuum or ultrasonic processes. Its hydrocarbon-free formulation does not leave any greasy film on the parts in a vacuum process.

### ▪ ALLSTRIP

Water-soluble solvent with a high flash point for the removal of glues, lacquers, in ultrasonic processes or in beakers. May replace acetone for degreasing operations.

## OIL REMOVAL IN VACUUM PROCESS



## FINISHING

for rinsing, brightening

### ▪ RODASTEL 30

Multipurpose acid finish: deoxidation / brightening of metals (steel, aluminium, brass and other copper alloys) and removal of firescale from laser engraving or welding.

for deoxidation

### ▪ SOLVIT N°4

Strong acid detergent for heavy duty deoxidizing and surface activation prior to PVD coating or electroplating.

for passivation

### ▪ DECOMET

Citric acid-based passivation. Solubilizes free iron oxides, present on the surface of stainless steels, and promotes the oxidation of chromium, to form a passive layer.

for corrosion protection

### ▪ GALVEX 18.08

Slightly alkaline finish, which leaves a water-repellent film. Increases the speed of the drying process.

### ▪ KORROSTOP 5000

Rinsing additive in final rinse steps for an optimal protection against corrosion of sensitive steels.



## STRONG ALKALIS

for heavy pollutions

### ▪ RODACLEAN 2018

For ultrasonic cleaning. With its high sodium and potassium hydroxydes concentration, it removes soluble oils, polishing pastes, as well as all types of abrasives. Not compatible with copper alloys and aluminiums.

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### POLLUTIONS

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## DETERGENTS, SOLVENT, FINISHING AND SPECIFIC APPLICATIONS

PRODUCT	pH	TYPE	FUNCTION	APPLICATION/CONTAMINATION
KORROSTOP 5000	12.3	Rinsing additive	Ultrasonic or spray cleaning	Protection against corrosion
DECOCLEAN 540 <sup>1</sup>	13.9	Detergent	Spray cleaning	Neat oil
DECOSPRAY SUPER <sup>1</sup>	8.4			
BIOPTIC 101	1.8	Finishing detergent		Hydrophilic finish, brightening effect
BIOPTIC 201	0.7			Deoxidation

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### SUPPORT

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## STRONG TO MILD ALKALIS

for heavy pollutions

### ▪ DECOCLEAN 540

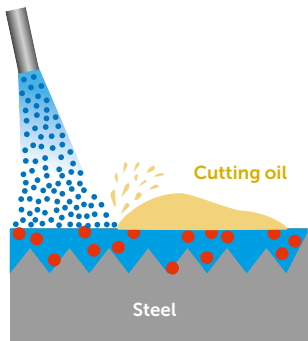
Strong alkaline detergent for the removal of neat oil, polishing compounds in spray processes. The machine must be equipped with an oil separator. Not compatible with copper alloys and aluminiums.

### ▪ DECOSPRAY SUPER

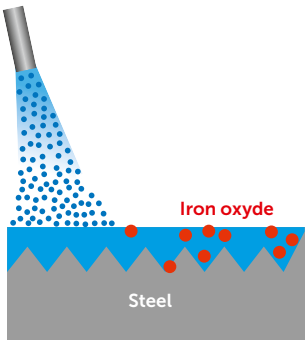
Mild alkaline detergent for the removal of neat oil, polishing compounds in spray processes. The machine must be equipped with an oil separator. Suited for aluminium alloys.



## PRINCIPLE OF SPRAY CLEANING



1. Spray cleaning with Decoclean



2. Deoxidation with Bioptic



3. Clean and bright surface

## CORROSION PROTECTION

### ▪ KORROSTOP 5000

Rinsing additive in final rinse steps for an optimal protection against corrosion of sensitive steels.

## FINISHING

for rinsing and neutralising

### ▪ BIOPTIC 101

Multipurpose acid finish: deoxidation / brightening of metals (steel, aluminium, brass and other copper alloys) and removal of firescale from laser engraving or welding.

### ▪ BIOPTIC 201

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## THE APPLICATION CENTRE, A NETWORK OF EXPERTISE

Ask our experts to help you define the right process from scratch or improve an existing one with our products.

NGL laboratories are open to perform lab tests in industrial cleaning systems with your parts.

### CLEANING EQUIPMENTS:

- A Riebesam spray machine, with over and under nozzles, 4 dosing units, and 0,6 bar pressure jets.
- A Novatec Pluritank ultrasonic line with dual frequencies (25 and 40 kHz), 4 cleaning stages, 4 rinsing stages (Tap and DI water), and a lift-out unit.
- For high purity cleaning and sensitive parts, additional frequencies of 80 and 130 kHz are available.
- A Novatec CRD monochamber machine for partial vacuum ultrasonic cleaning coupled with spray cleaning cycles. Particularly suited for complex geometries.

### CLEANING CONTROL EQUIPMENTS:

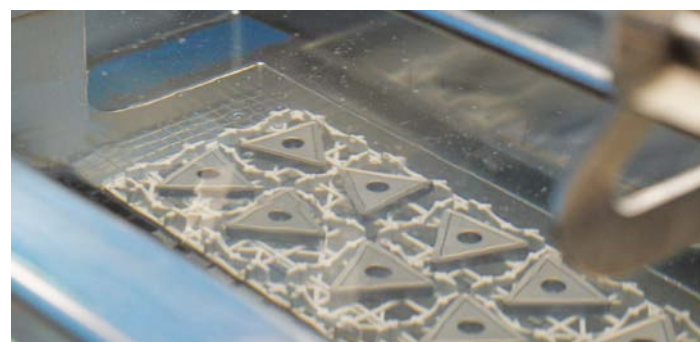
- Kruss DSA 100 E => surface tension and polarity measurer
- Keyence VHX 5000 => extreme magnification
- MEB JEOL 5600LV x Oxford EDX => surface and pollution characterisation
- Leica systems particles counting
- Binocular microscopes, dyne pens, etc...



### APPLICATION CENTRES IN THE WORLD:



- Switzerland (Headquarter)
- Denmark
- Germany
- France
- United States
- China
- Singapore



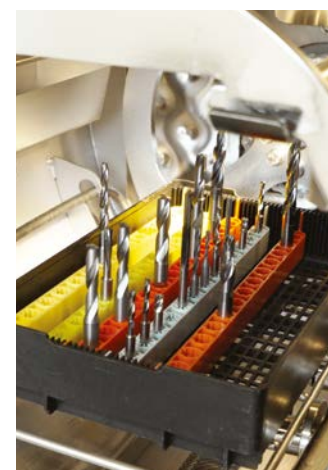
## THE DECOATING CENTRE IN BOCHOLT, GERMANY

Our decoating processes are suited for PVD, CVD and PACVD deposited layers.



NGL develops and provides decoating solutions and services for small drill bits, to large pieces such as molds, parts sizes up to 1.5m in diameter and weighing up to 5t.

Our expertise extends to intricate and long parts, with blind holes and deep cavities.



### PARTS TO BE DECOATED :

- Cutting tools
- Molds/dies
- PVD chamber parts
- PVD planetary and tube holders
- CVD graphite and CFC parts
- Ceramic components
- Decorative parts
- Special tools
- Recycling materials (carbide scrap)



### TANK CAPACITIES:

- 3 tanks: 20x30x20 cm
- 3 tanks: 50x60x45 cm
- 3 tanks: 140x25x50 cm
- 3 tanks: 145x145x50 cm
- 3 tanks: 280x80x70 cm
- 6 tanks: 45x60x45 cm
- 6 tanks: 145x70x70 cm

Over 15 different decoating processes in more than 50 different tanks available.



WEIGHT CAPABILITIES : Up To 5t



# OUR SUBSIDIARIES AROUND THE WORLD

## NGL FRANCE SAS

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## NGL CLEANING GMBH

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ELMHURST, IL 60126, USA  
[usa@ngl-group.com](mailto:usa@ngl-group.com)



14/12/23



## NGL CLEANING TECHNOLOGY SA - ECOLOGICAL CLEANING SOLUTIONS

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